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Advice on Hides and Skins

Ira D. Clarke,
Clifton D. Lowe

For ages man has used the hides and skins of animals to cover his feet and body, to provide shelter, and to make thongs, slings, vessels for liquids, floats, and many other things. Perhaps at first he simply dried the skins before using them, but very early he learned to tan them to make them more durable and useful.

Today the livestock slaughterer derives his largest single byproduct income from hides and skins. Nearly 7 percent of the live weight of a meat animal is in its hide. The tanner must carry a large inventory of this comparatively high-priced, perishable commodity to produce leather.

Before we discuss quality and uses, we should note that in English, as in most of the European languages, a hair-splitting distinction is made between hides and skins, based only on size and thickness. Hides are large and relatively thick. Skins are small and thin. Cattle, horses, and buffaloes, for example, have hides. Calves, sheep, goats, and rabbits have skins.

THE COMMERCIAL VALUE of a hide or skin is based on its size, shape, thickness, smoothness, texture, and its physical condition. The basic value of a hide is determined by the characteristics of the live animal, but its actual value may be lowered by improper care of the animal during its lifetime and of the hide during and after slaughter.

The basic quality of a hide or skin is influenced by the species, breed, sex, age, size, weight, shape, and general health of the animal that produced it.

Species determines the size, weight, and shape of the animal and therefore of the hide or skin. Tanners always name the species when they buy hides or skins. Many tan only skins from one species.

Breed, although important, is seldom particularized by the tanner when he buys hides because of the difficulty in meeting such a requirement. Practically all the skins used by the tanner are byproducts from animals slaughtered for food purposes and, regardless of his preference, he tans all skins that will make leather.

Two studies have been made in which hides from cattle of different breeds were compared. W. H. Black, A. T. Semple, and J. L. Lush, of the Department of Agriculture, reported that part-Brahman animals had heavier, larger hides than Hereford or Shorthorn steers. They believed differences in thickness of skin due to breed are not important, although they were unable to make accurate measurements of thickness.

Dr. J. H. R. Bisschop, A. Gardner, J. Sebba, and S. G. Shuttleworth, who worked at the Leather Industries Research Institute in South Africa, in 1943 examined hides from Africander, Sussex, Red Poll, and Friesland cattle. The Africander hides were largest and heaviest and made sole leather that wore longest on a laboratory testing

lambs. One of each pair had been fed just enough to maintain body weight without loss or gain; its twin had been fed enough of the same diet to nearly double its weight during the 112 days of the feeding period. The raw skins and leather from the maintenance-fed lambs weighed about 42 percent as much as the skins and leather from the full-fed lambs. Except for size and thickness, there was no difference between the two lots in leather-making quality. Each lot tanned satisfactorily and to the same degree. Although the leather from the maintenance-fed lambs was, on the average, only three-fifths as strong as that from the full-fed lambs, the strengths were the same when calculated to unit thickness.

Bisschop and coworkers in 1943 found an increase in weight and area of hide due to feeding bonemeal. The hide of a Sussex beef animal fed bonemeal had an area of 50 square feet and weighed 77.2 pounds, whereas a hide from a control animal not fed bonemeal had an area of 43.1 square feet and weighed 63 pounds.

NUMEROUS TYPES of disease, injuries, dietary deficiencies, and parasites damage hides.

At least a third of all cattle hides produced in the United States contain five or more grub holes and therefore are sold at a discount. The proportion of damaged hides has been reduced in recent years by the widespread use of effective insecticides, but the loss in value of hides and leather from grub damage in 1947 was estimated by the Tanners' Council of America as amounting to 20 million dollars.

Mange mites, ticks, lice, screwworms, and other pests also reduce hide quality.

Branding is another source of loss in hides and leather. At present prices, damage to hides from branding results in a financial loss of at least 6 million dollars a year. The loss can be reduced materially by using smaller brands, branding only the less valuable parts of the hide, such as the jaw, neck, shoulder, or thigh of the animal, using open-design brands and wide-faced irons to avoid blotching, and branding only animals that cannot be satisfactorily identified by other means.

Shearing marks on sheepskins and cuts and scratches caused by barbed wire, horns, or protruding nails in barns, trucks, or railway cars mar the surface of skins so they cannot be used for articles requiring an attractive finish.

NEARLY A MILLION CATTLE and three quarters of a million calves are slaughtered for food annually by farmers, and many die from natural causes. A substantial loss, therefore, may result from poor skinning and improper care of the flayed skins on farms. Care is necessary throughout the skinning process, first to make the opening cuts in the proper places so the hide will have the correct pattern and then to prevent cuts and scores in the hide. Scores, although they do not pass entirely through the skin, are almost as bad as cuts, because they weaken the leather so it is useless for many purposes.

After removal from the animal, the skin is almost as perishable as meat. Prompt sale is important, but if it is impossible, each hide should be salted as soon as it loses its animal heat. The flesh side of the hide, spread with the hair side down, should be completely covered with salt—about a pound to a pound of hide. The salted hide should be covered—paper can be used—so it will not dry out; otherwise the salt will not penetrate to the middle of the hide and spoilage may occur later. After a couple of weeks, the hide may be folded to a square bundle and stored in a cool place until it can be marketed. Salted hides or skins should be stored under refrigeration, preferably at about 55° F. and 70 to 75 percent relative humidity if they are to be kept longer than 4 or 5 months. The storage room should not be too dry (because drying lowers the value of hides) but, more important, it must not be too wet.

section of the country, although originally only hides from the Southwest were so designated. Colorado steer hides are large, rangy, side-branded hides from any State. Heavy cowhides weigh 53 pounds or more; light cowhides, 30 to 53 pounds. Buffs are country hides weighing between 45 and 50 pounds. Kips are all skins weighing between 15 and 30 pounds. Calfskins weigh 15 pounds or less.

A hide in good condition is classed as No. 1. If the grain surface is damaged or the hide is cut or scored anywhere except in the belly or neck portion, it is classed as No. 2. Grubby hides, those having five or more open grub holes, are sold at a discount.

TO ANIMALS, the obvious use of the skin is for protection. It helps prevent the entrance of bacteria or parasites into the body and acts as a buffer against injuries. It also helps regulate body temperature. The hair in winter insulates the animal against cold and so reduces the loss of body heat. To dissipate heat in summer, many animals have sweat glands which cool the animal and also eliminate waste products. The sweat glands are in the skin. Brahman or Zebu cattle have a liberal supply of them. Attached to the base of each hair is the erector-pili muscle, which contracts when the body surface is chilled suddenly, causing the hair to stand on end, forming goose-flesh, and compressing an oil gland just above the muscle. Oil from the gland is forced into the hair follicle and to the surface of the skin, where it retards evaporation and so assists in retaining body heat. Before tanning, the glands, hair, and epidermis are removed completely, because their presence would prevent the production of well-tanned, supple leather.

Leather is used by man for innumerable purposes. The Armed Forces use leather for airplane seats, belts, belting, boots, garments, gas masks, gloves, gun cases, harness, helmet liners, holsters, mattresses on submarines, recoil mechanisms, rifle slings, rigging on shipboard, shoes, straps, textile rollers, washers, and upholstery on many ships and vehicles. Civilian uses are even more numerous. Shoes, the most important use, require leather from about 80 million hides and skins each year. Approximately a million hides are used annually for belting and mechanical leathers; three quarters of a million for bag, case, and strap leathers; half a million for upholstery leather; and one third of a million for harness and saddlery. Gloves and garments take 10 million sheepskins annually; 5 million are shearlings. Although those quantities meet peacetime needs, in wartime the difficulty in importing hides and the greatly increased demands of the Armed Forces make leather a highly critical material.

Specific kinds of cowhide leathers are: Apron, bag, baseball, basketball, briefcase, buckskin, garment, hydraulic, lace, luggage, moccasin, piano, seat-cover, slipper, sole, textile, upholstery, valve, waist-belt, wallet, washer, welting, and whip. Cowhide is also embossed to make imitation alligator, ostrich, pigskin, reptile, and other leathers. Steer hides are used for many of the same purposes that call for a heavier leather. By splitting to proper thickness, steer hides or cowhides can be adapted to almost any purpose for which leather is needed.

Bull hides are used for automobile, gear, harness, mechanical, sole, and upholstery leather. Calfskins are used for making leathers for billfolds, bookbindings, garments, gaskets, handbags, laces, linings, meters, parchment, and pianos.

Goatskins are used for bookbinding, glove, handbag, hat, lining, piano, wallet, and shoe-upper leathers. From sheepskins are made leathers for billfolds, bookbinding, gaskets, gloves, handbags, packing, parchment, pianos, pocketbooks, suede, shoe uppers, and valves and washers. Sheepskins also are embossed and finished to imitate many kinds of more expensive leathers.

Sheepskins and lambskins, particularly those from fine-wool types and